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## 29. SWARMING OF BUTTERFLIES

On 7 May, 1989 at about 0600 hrs, near Haflong in Assam, the day was as exceptionally fine and sunny. I noticed a large number of butterflies flying around. I did not pay much attention then, assuming that this was due to the fine weather. By 0830 hrs, the butterflies were flying in groups of fifties or more. Within an hour, they were flying in hundreds, purposefully from north to south, hardly 2-3 m above ground level but sometimes overflying trees 10 to 15 m high.

There were mixed swarms of different species of which I could identify only the large cabbage white *Pieris brassicae* and the white orangetip *Ixias*

*marianne*. By 1230 hrs, the main swarm had flown past, though stragglers kept flying southwards till late evening.

On the same day, I saw a swarm at Jatinga, about 8 km south of Haflong. During the same week, one of my colleagues saw a large number of butterflies while driving from Lumding to Diphu Road about 100 km north of Haflong. I had never seen such swarming of butterflies and was not aware of such swarming in India.

March 3, 1990

K.K. GUPTA

## 30. ON THE MIGRATION OF THE LARGE CABBAGE WHITE BUTTERFLY *PIERIS BRASSICAE* IN KASHMIR<sup>1</sup> (With a text-figure)

The large cabbage white *Pieris brassicae* is common in the western Himalayas. It is an altitudinal migrant, descending to plains and lower hills in winter and migrating back in summer (Wynter-Blyth 1957). The mass movements of this species are conspicuous and well documented in Europe (Williams 1930), but the published data from India is fragmentary. The following is one such instance of migration of this species.

The location was the western ridge of the Overa Wildlife Sanctuary, Kashmir, the altitude being 3800 m. On one side the ridge falls sharply towards Liddar valley and on the other side the slope is gradual towards the Jhelum valley. The top of the ridge is narrow at some places, broadening to grassy meadows strewn with alpine flowers. The ridge is flanked by stands of silver birch (*Betula* sp.), sparser

near the top.

The mass movement of butterflies was first noted on the morning of 28 May 1988. The weather was calm, clear and sunny, and remained thus throughout. It continued till afternoon of the next day. Thereafter it became cloudy, overcast with a hint of rain. As we became aware of the sudden influx of butterflies it became apparent that a migration was in progress. The butterflies were coming up the ridge in an incessant stream. The flight was rapid in one direction and the butterflies were flying on, hardly resting. They kept mostly to the crest of the ridge, and at the centre the air appeared to be thick with butterflies, flying from ground level almost till the eye could reach. So striking and conspicuous was this movement that it was impossible not to notice it. The direction of the flight was from south to north (Fig. 1).

The flight of the butterflies was followed until a point where the ridge rises sharply to about 4000 m.

<sup>1</sup> This note was earlier published in Vol. 88 No. 1. Due to a production error, part of the text was omitted. The entire note is therefore being reproduced here.